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PATENT

ORIGINAL PATENT APPLICATION TRANSMITTAL LETTER

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WASHINGTON, DC 20231



Transmitted herewith for filing is the patent application of:

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Title: A SYSTEM AND METHOD FOR COMMUNICATING IMAGES TO A
REMOVABLE MEDIA DEVICE

CERTIFICATION UNDER 37 C.F.R. §1.10

I hereby certify that this Original Application Transmittal and the documents referred to as enclosed therein are being deposited with the United States Postal Service on this date, December 27, 1999 in an envelope as "Express Mail Post Office to Addressee", Mailing Label N° EL 533 975 750 US, with sufficient postage, addressed to: Box Patent Application, Assistant Commissioner for Patents, US PTO, Washington, D.C. 20231.

Lisa Marks

DATED: December 27, 1999

1. Type of Application

This is an Original application.

2. Papers Enclosed That Are Required for Filing Date under 37 C.F.R. §1.53(b) (Regular) or 37 C.F.R. §1.153 (Design) Application

Ten (10) Pages of Specification;

Five (5) Pages of Claims;

One (1) Page of Abstract; and

Six (6) Sheets of Drawing Figures.

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3. Additional Papers Enclosed

None

4. Declaration or Oath

Signed Declaration and Power of Attorney are attached.

5. Inventorship Statement

The inventorship for all the claims in this application are the same.

6. Language

English.

7. Assignment

Signed Assignment is attached.

8. Certified Copy

None are required.

9. Fee Calculation (37 C.F.R. §1.16)

BASIC FILING FEE		\$760.00
EXCESS CLAIM FEE		
TOTAL OVER TWENTY	0 X \$ 18.00	
INDEPENDENT OVER THREE	0 X \$ 78.00	
MULTIPLE DEPENDENT CLAIMS	0 X \$260.00	
ASSIGNMENT RECORDATION FEE		\$40.00

TOTAL FILING FEES		\$800.00
		=====

10. Small Entity Statement(s)

None required.

11. Request for International - Type Search (37 C.F.R. §1.104(d))

None required.

12. Authorization to Charge Fees

Enclosed please find Check N° 9065 in the amount of **\$800.00**. Please charge any underpayments related to this filing or credit any excess to Deposit Account N° 19-4882. A copy of this *Transmittal* is enclosed for accounting purposes only.

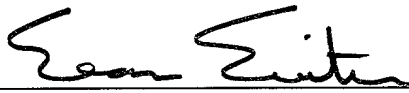
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DATED: December 27, 1999

Respectfully submitted,

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A4-4291
EL 533 975 750 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION FOR PATENT

ON

A SYSTEM AND METHOD FOR COMMUNICATING
IMAGES TO A REMOVABLE MEDIA DEVICE

BY

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BY: Penny L. Hint

A SYSTEM AND METHOD FOR COMMUNICATING
IMAGES TO A REMOVABLE MEDIA DEVICE

FIELD OF THE INVENTION

5 The present invention generally relates to the field of image preservation, and particularly to a system and method for communicating and storing images.

BACKGROUND OF THE INVENTION

10 The field of storing and preserving images has made great advances. From previous photographic methods that required the developing of pictures and film using chemical methods to current electronic methods wherein an image may be stored electronically, users have access to a wide range of options. However, current electronic methods are still inconvenient to a user. For example, a user of a digital camera may wish to view the image on another device, such as a video display device with a larger
15 viewing area. To accomplish this, the user must connect cables from the digital camera to an image-viewing device to transfer the image. Connecting cables may be awkward, both to store and locate the cables, and then to properly connect the cables between the devices. Further, the image as utilized by a digital camera may be stored in a format that is incompatible with the image-viewing device, making the viewing of the image
20 difficult if not impossible.

 One method used to avoid the inconvenience of connecting cables involved storing the image on a medium that may be accessed by a user on another system. For example, in the past, if a user wished to have images stored on a video disk, the user typically requested that the photographs be mastered on the disk by a photo processing
25 lab. This process is inconvenient to the user. For instance, mastering the images on a videodisk may require an image processing service to format the disk with the images, which requires a significant amount of time and is generally expensive. Additionally, the user is typically not able to specify which images to add, change, and the like. Further, the images may be converted to a format that is not supported by the system the user
30 wishes to use to view the images.

 Therefore, it would be advantageous to provide a system and method for the

communication and storage of images.

SUMMARY OF THE INVENTION

Accordingly, the present invention is directed to a system and method for
5 communicating and storing images. In a first aspect of the present invention, a method
for communicating and storing an image on a removable media device includes
communicating the image from an image capture device to the removable media device
over a wireless connection. The communicated image is stored in memory on the
removable media device, and the stored image is deciphered. The deciphered image is
10 recorded on removable media, the recorded image capable of being accessed on
removable media devices.

In a second aspect of the present invention, a system for communicating and
storing an image on a removable media device includes a wireless communication device
for communicating the image from an image capture device to the removable media
15 device utilizing a wireless connection. The system also includes a memory device for
storing the communicated image in memory on the removable media device and a
decoder/encoder device for deciphering the stored image. Further, the system includes
a recording device for recording the deciphered image on removable media wherein the
recorded image on the removable media is capable of being played back on removable
20 media devices.

In a third aspect of the present invention, a method for communicating and
formatting an image from an image capture device includes initiating a connection
between an image capture device and an image storage device and querying the image
capture device for a supported format. If the supported format differs from an image
25 format, the image is deciphered to the supported format and communicated from the
image capture device to the image storage device.

It is to be understood that both the foregoing general description and the following
detailed description are exemplary and explanatory only and are not restrictive of the
invention as claimed. The accompanying drawings, which are incorporated in and
30 constitute a part of the specification, illustrate an embodiment of the invention and
together with the general description, serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The numerous advantages of the present invention may be better understood by those skilled in the art by reference to the accompanying figures in which:

FIG. 1 is an illustration of an exemplary embodiment of the present invention wherein an image capture device configured as a digital camera is capable of transferring an image over an infrared link to a removable media device configured as a digital versatile disk (DVD) device;

FIG. 2 is an illustration of an additional exemplary embodiment of the present invention wherein an image capture device configured as a camcorder is capable of transferring an image over a radio frequency (RF) link to a removable media device;

FIG. 3 is a block diagram depicting an exemplary embodiment of the present invention wherein an image communication and recordation system including an image capture device and image storage device is shown;

FIG. 4 is a flow diagram depicting an exemplary method of the present invention wherein an image is transferred over a wireless connection to be deciphered and recorded for later access;

FIG. 5 is a flow diagram depicting an additional exemplary method of the present invention wherein an image captured on a digital camera is transferred over a wireless connection, deciphered from a first format to a second format, and recorded onto a removable medium; and

FIG. 6 is a flow diagram depicting an exemplary method of the present invention wherein an image captured on a digital camera determines a desired format of a removable media device, decipheres the image to the desired format, and then transfers and records the image on a removable medium.

DETAILED DESCRIPTION OF THE INVENTION

Reference will now be made in detail to the presently preferred embodiments of the invention, examples of which are illustrated in the accompanying drawings.

Referring generally now to FIGS. 1 through 6, exemplary embodiments of communicating and storing images are shown. An image capture device includes a digital camera, camcorder and the like utilized to capture an image. A removable media device includes a device capable of utilizing a digital versatile disk (DVD), compact disc-rewriteable (CD-RW), compact disc recordable and erasable (CD-R/E), video compact disc (VCD), and the like as contemplated by a person of ordinary skill in the art. Exemplary methods for communicating and recording images are discussed. It is understood that the specific order, or hierarchy, disclosed is exemplary in nature. Based upon design preferences, it is understood that the specific order, or hierarchy, can be rearranged while remaining within the scope of the present invention. The attached method claims present elements of the various steps in a sample order, and is not meant to be limited to the specific order or hierarchy presented.

Referring now to FIG. 1, an exemplary embodiment of the present invention is shown. A system 100 for transferring and recording an image includes an image capture device 102. The image capture device 102, configured as a digital camera, includes an infrared communication device 104 for establishing a wireless connection with a removable media device 106 that also includes an infrared communication device 108. The removable media device 106 is configured as a digital versatile disk (DVD) device. In this way, the image capture device 102 is capable of establishing a wireless connection with the removable media device 106 without the time-consuming process of connecting cables.

Additionally, the use of an infrared connection has certain security and connection advantages. Typically, an infrared connection device has a thirty degree range at which to point toward a second infrared connection device, although full 360 degree infrared connection devices are available. By utilizing a limited range, a user may restrict the access to the transmitted images thereby limiting the chances of unauthorized access to the images. Further, the limited range may eliminate the confusion of connecting to more than one available device by allowing the user to "aim" the image

capture device at the removable media device.

Referring now to FIG. 2, an additional exemplary embodiment of the present invention is shown. A system 200 for transferring and recording an image includes an image capture device 202 configured as a digital camcorder. The image capture device
5 202 includes a radio frequency communication device 204 for establishing a wireless connection with a removable media device 208 that also includes a radio frequency communication device 106. Thus, a connection is capable of being established without attaching cables.

Further, the wireless connection may be of sufficient strength to enable a
10 connection to be established even in the presence of obstructions. For example, the image capture device 202 may establish a connection with the removable media device 208 even though a wall 210 is positioned between the two units. Further, the wireless connection may be of sufficient strength to bounce the signal to enable a wireless connection to be established between devices placed in different locations, such as
15 different rooms. For example, an infrared signal may be generated of sufficient strength to bounce off objects and obstructions to extend the effective range of the connection. In this way, a user may transfer and record images to a removable media device regardless of the orientation of the image capture device. Although an infrared wireless network and radio frequency network are disclosed, it should be apparent that a wide
20 range of wireless networks may be utilized by the present invention as contemplated by a person of ordinary skill in the art without departing from the spirit and scope thereof.

Referring now to FIG. 3, a block diagram is shown depicting an exemplary image communication and transfer system 300. An image capture device 302 includes a wireless linking device 304 for communicating over a wireless network, such as a radio
25 frequency and/or infrared network. An image storage device 306, such as a removable media device, also includes a wireless link 308. In this way, the image capture device 302 is capable of communicating with the image storage device 306 without the necessity of cables, greatly improving the efficiency of image transfer and the mobility of the image capture device. The image storage device receives an image over the link and
30 transfers the image to memory 310. The entire image or merely portions of the image as the image is communicated may be transferred to memory 310 at which, a

decoder/encoder converts the image or portion of the image to the desired format. If the image is already in the desired format, the decoder/encoder is capable of transferring the image directly to the recording system 314. Once the image is in the desired format, the recording system records the image so that it may be latter accessed. The recording
5 system may record the image on removable media so that the image may be transferred and accessed on a wide variety of systems. For example, the image may be recorded on a digital versatile disk (DVD) to be accessed on a home theater, information handling system, such as a personal computer, and the like.

Additionally, the image storage device may include the ability to communicate
10 with other devices either directly or through a network connection device. For example, the image storage device may communicate with a website through a modem, Ethernet, digital camera through universal serial bus (USB), universal asynchronous receiver-transmitter (UART), or infrared link, computer through universal serial bus (USB), IEEE 1394, universal asynchronous receiver-transmitter (UART), Ethernet or infrared link,
15 digital camcorder through IEE 1394, analog composite video, s-video and the like. The image storage device may communicate directly through a system bus, which may comprise any state of the art bus architecture according to promulgated standards. For example, the system bus may include industry standard architecture (ISA), extended industry standard architecture (EISA), Micro Channel Architecture (MCA), peripheral
20 component interconnect (PCI) local bus, standards promulgated by the Institute of Electrical and Electronics Engineers (IEEE) including IEEE 488 general-purpose interface bus (GPIB), IEEE 696/S-600, and so on. Furthermore, the system bus may be compliant with any promulgated industry standard. For example, the system bus may be designed in compliance with any of the following bus architectures: parallel interface,
25 Industry Standard Architecture (ISA), Extended Industry Standard Architecture (EISA), Micro Channel Architecture, Peripheral Component Interconnect (PCI), Universal Serial Bus (USB), Access bus, IEEE P6394, Apple Desktop Bus (ADB), Concentration Highway Interface (CHI), Fire Wire, Geo Port, or Small Computer Systems Interface (SCSI), for example.

30 The image storage device may also communicate with other devices and system through a network connection device. The network connection device preferably

implements industry promulgated architecture standards, including Recommended Standard 232 (RS-232) promulgated by the Electrical Industries Association, Infrared Data Association (IrDA) standards, Ethernet IEEE 802 standards (e.g., IEEE 802.3 for broadband and baseband networks, IEEE 802.3z for Gigabit Ethernet, IEEE 802.4 for token passing bus networks, IEEE 802.5 for token ring networks, IEEE 802.6 for metropolitan area networks, 802.66 for wireless networks, and so on), Fibre Channel, digital subscriber line (DSL), asymmetric digital subscriber line (ASDL), frame relay, asynchronous transfer mode (ATM), integrated digital services network (ISDN), personal communications services (PCS), transmission control protocol/Internet protocol (TCP/IP), serial line Internet protocol/point to point protocol (SLIP/PPP), Universal Serial Bus (USB), and so on. For example, the network connection device may comprise a network adapter, a serial port, parallel port, printer adapter, modem, universal asynchronous receiver-transmitter (UART) port, and the like, or use various wireless technologies or links such as an infrared port, radio-frequency (RF) communications adapter, infrared transducers, or RF modem.

Referring now to FIG. 4, an exemplary method 400 for communicating and recording an image is shown. A user of an image capture device captures an image 402. The captured image is then transferred over a wireless connection 404. The transferred image is received in memory on the removable media device 406. The image is then deciphered 408. Deciphering the image may include decoding the stored image from a first format to a photoframe, and encoding the photoframe to a second format. Thus, the image may be deciphered to any desired format. For example, a user may wish to store an image from an image capture device to a digital versatile disk (DVD). A user may transfer the image from the image capture device in a first format, such as Graphic interchange Format (GIF), bitmap, and Joint Photographic Experts Group (JPEG) to a second format, such as a Motion Pictures Experts Group (MPEG) bitstream, capable of being utilized by the digital versatile disk (DVD) device, tagged image file format (TIFF) files, Kodak flashpix, and the like. The image may then be recorded on a removable medium 410. In this way, the image capture device is capable of receiving communicated images from a wide range of image capture devices and store these images on removable media so that the images may be shared on a variety of devices. Although

exemplary file formats are discussed, it should be apparent that a variety of formats may be utilized by the present invention and not depart from the spirit and scope thereof.

Referring now to FIG. 5, an additional exemplary method 500 for communicating and recording an image is shown. A user employs a digital camera to take a picture 502.

5 After taking the picture, the user may wish to store the picture, which may include text, music, voice clips, and the like, on a medium for storage and later viewing. Therefore, the user positions the digital camera to access a removable media device 504. This may involve aiming an infrared connection device on the camera toward an infrared connection device included on the removable media device. The wireless connection is
10 then initiated and the transfer of the image begun 506. The removable media device begins receiving the image 508 and deciphering the image, as it is received 510. The deciphered image is then recorded onto a removable medium 512. The removable medium is suitable for being accessed by other removable media devices 514. In this way, the user may share the images with others as desired by giving the medium
15 containing the images to the users. For example, the recorded image may be saved as a photo album or slide show to enable users to view and interact with a plurality of images.

Referring now to FIG. 6, an exemplary method 600 is shown wherein an image capture device is capable of encoding the image to a desired format of a storage device.

An image is contained on an image capture device 602. The image capture device then
20 initiates communication with an image storage device 604. The image capture device queries the image storage device for the desired format of the image 606. Querying may include receiving data from the image storage device of the formats supported by the image storage device upon initiation of the connection. If the image is not in the desired format, the image capture device may decode/encode the image to the desired format so
25 that the image capture device may transfer the image in the desired format 608. The image storage device may then receive 610 and store the image 612. In this way, an image capture device is capable to transferring images to a wide range of storage devices in a format supported by the storage device, thereby increasing the utility of the image capture device. For example, a user utilizing a digital camera may wish to store an image
30 on a digital versatile disk (DVD). The image capture device, upon initiation of the connection, may determine which format is supported by the digital versatile disk (DVD)

and supply the information in that format, such as an MPEG bitstream.

It is believed that the system and method for communicating and recording images of the present invention and many of its attendant advantages will be understood by the forgoing description. It is also believed that it will be apparent that various
5 changes may be made in the form, construction and arrangement of the components thereof without departing from the scope and spirit of the invention or without sacrificing all of its material advantages. The form herein before described being merely an explanatory embodiment thereof. It is the intention of the following claims to encompass and include such changes.

CLAIMS

What is claimed is:

- 1 1. A method for communicating and recording an image to a removable media
2 device, comprising:
3 communicating the image from an image capture device to the removable media
4 device via a wireless connection;
5 storing the communicated image in memory on the removable media device;
6 deciphering the stored image;
7 recording the deciphered image on removable media;
8 wherein the recorded image on the removable media is capable of being accessed
9 on removable media device.
- 1 2. The method as described in claim 1, wherein the removable media device includes
2 at least one of a digital versatile disk (DVD), digital video disk-erasable (DVD-e), VCD,
3 and compact disc.
- 1 3. The method as described in claim 1, wherein the wireless connection includes at
2 least one of an infrared link and radio frequency link.
- 1 4. The method as described in claim 1, wherein deciphering includes decoding the
2 stored image from a first format into a photoframe and encoding the decoded image into
3 a second format.
- 1 5. The method as described in claim 4, wherein the first format includes at least one
2 of Graphics Interchange Format (GIF), Hypertext Markup Language (HTML), bitmap,
3 and Joint Photographic Experts Group (JPEG) and the second format includes Motion
4 Pictures Experts Group (MPEG) bitstream.
- 1 6. The method as described in claim 5, wherein the deciphered image is recorded on
2 a digital versatile disk (DVD) device.

1 7. The method as described in claim 1, wherein the recorded image is played back
2 as at least one of a photo album and slide show.

1 8. The method as described in claim 1, wherein the recorded image includes at least
2 one of text, music and voice clips.

1 9. A system for communicating and recording an image to a removable media
2 device, comprising:
3 a wireless communication device for communicating the image from an image
4 capture device to the removable media device via a wireless connection;
5 a memory device for storing the communicated image in memory on the
6 removable media device;
7 a decoder/encoder device for deciphering the stored image;
8 a recording device for recording the deciphered image on removable media;
9 wherein the recorded image on the removable media is capable of being accessed
10 on removable media device.

1 10. The system as described in claim 8, wherein the removable media device includes
2 at least one of a digital versatile disk (DVD), digital video disk-erasable (DVD-e), VCD,
3 and compact disc.

1 11. The system as described in claim 8, wherein the wireless connection includes at
2 least one of an infrared link and radio frequency link.

1 12. The system as described in claim 8, wherein deciphering includes decoding the
2 stored image from a first format into a photoframe and encoding the decoded image into
3 a second format.

1 13. The system as described in claim 11, wherein the first format includes at least one
2 of Graphics Interchange Format (GIF), Hypertext Markup Language (HTML), bitmap,
3 and Joint Photographic Experts Group (JPEG) and the second format includes Motion
4 Pictures Experts Group (MPEG) bitstream.

1 14. The system as described in claim 8, wherein the recorded image is played back
2 as at least one of a photo album and slide show.

1 15. The system as described in claim 8, wherein the recorded image includes at least

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- 2 one of text, music and voice clips.

1 16. A method for communicating and formatting an image from an image capture
2 device, comprising:
3 initiating a connection between an image capture device and an image storage
4 device;
5 querying the image storage device for a supported format;
6 wherein the supported format differs from an image format, deciphering the
7 image to the supported format and communicating the image from the image capture
8 device to the image storage device.

1 17. The method as described in claim 16, wherein the image is communicated over
2 a wireless connection.

1 18. The method as described in claim 17, wherein the wireless connection includes
2 at least one of a infrared and radio frequency connection.

1 19. The method as described in claim 16, wherein the image capture device includes
2 at least one of a digital camera and digital camcorder and the image storage device
3 includes a removable media device including at least one of a digital versatile disk
4 (DVD), digital video disk-erasable (DVD-e), VCD, and compact disc.

1 20. The method as described in claim 16, wherein deciphering includes decoding the
2 stored image from a first format into a photoframe and encoding the decoded image into
3 a second format.

A SYSTEM AND METHOD FOR COMMUNICATING
IMAGES TO A REMOVABLE MEDIA DEVICE

5

ABSTRACT

A system and method for communicating an image to a removable media device includes communicating the image from an image capture device to the removable media device over a wireless connection. The communicated image is stored in memory on the removable media device, and the stored image is deciphered. The deciphered image is recorded on removable media, the recorded image capable of being accessed on removable media device. In an additional aspect of the present invention, a method for communicating and formatting an image from an image capture device includes initiating a connection between an image capture device and an image storage device and querying the image storage device for a supported format. If the supported format differs from an image format, the image is deciphered to the supported format and communicated from the image capture device to the image storage device.

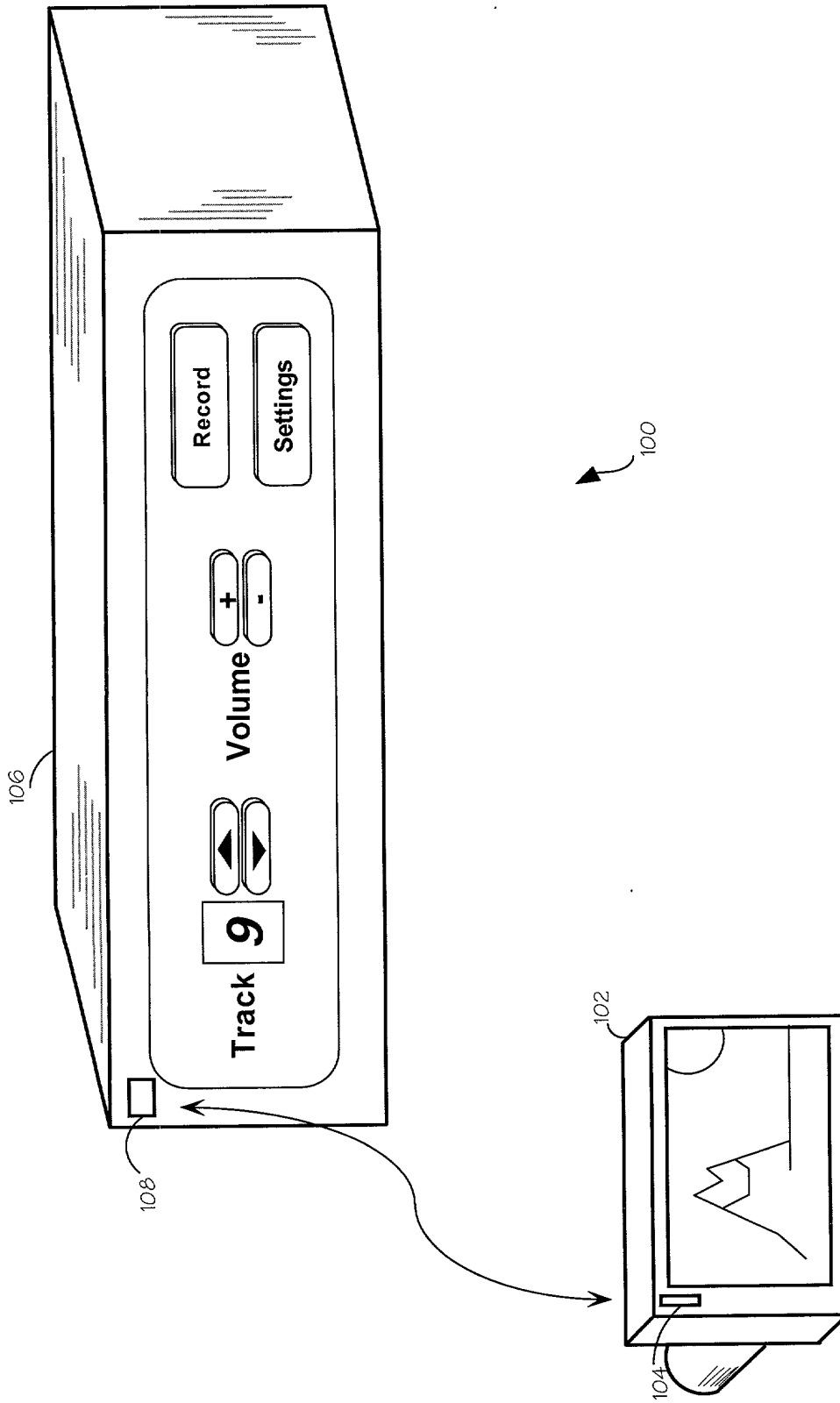


FIG. 1

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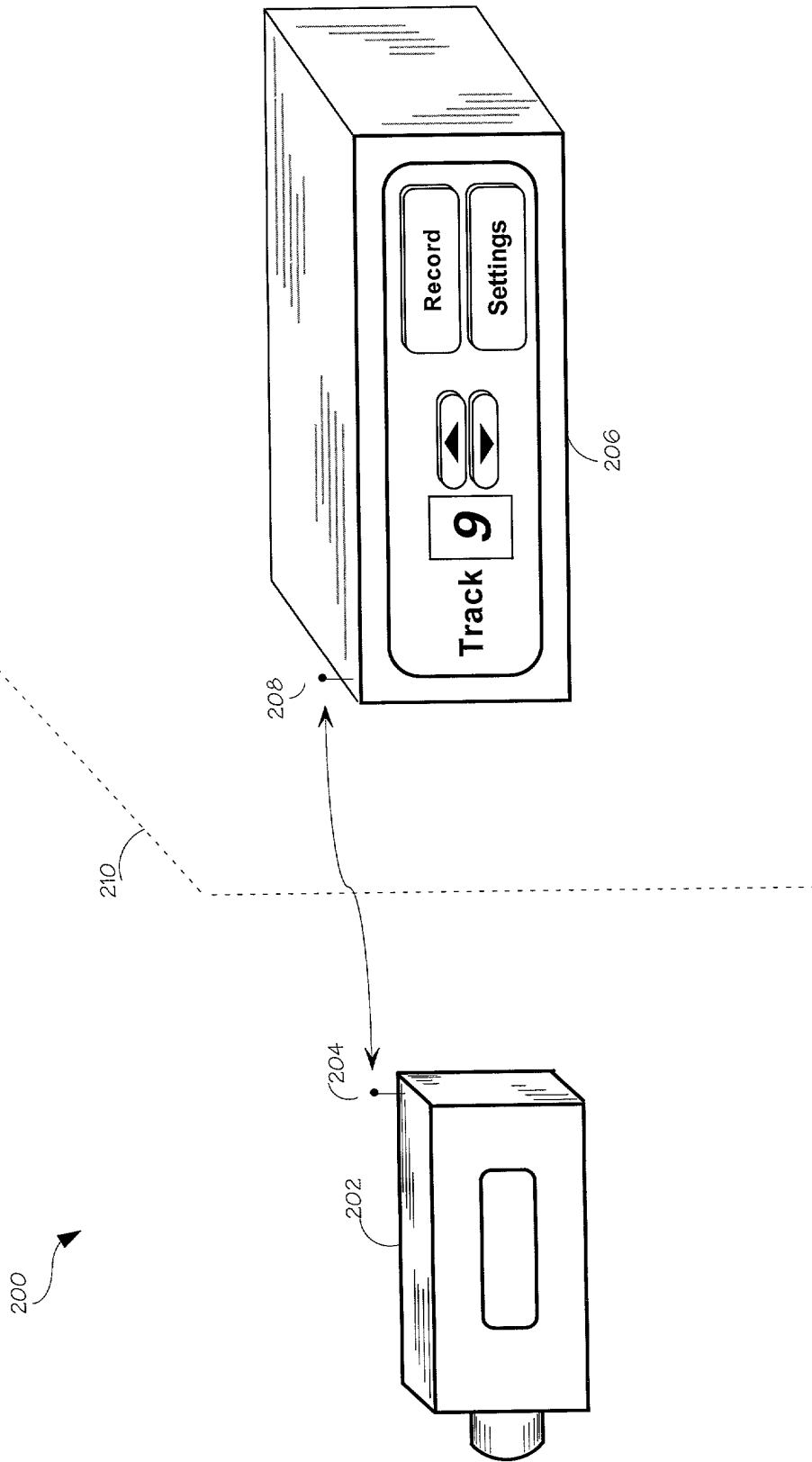


FIG. 2

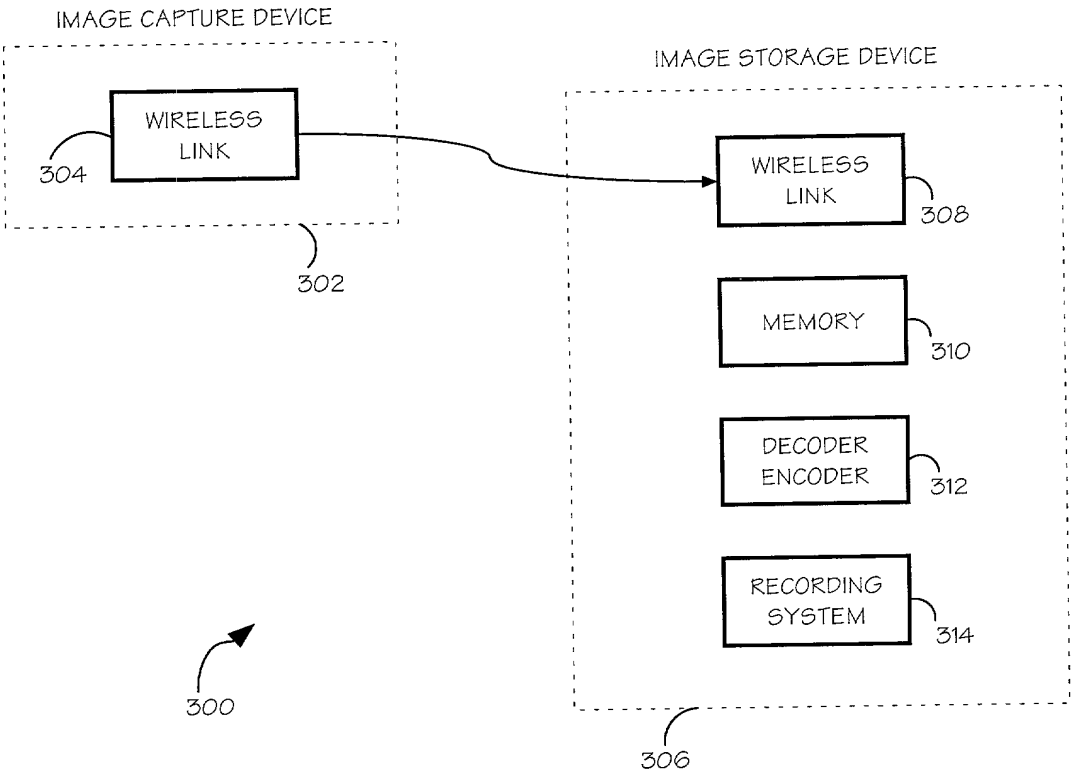


FIG. 3

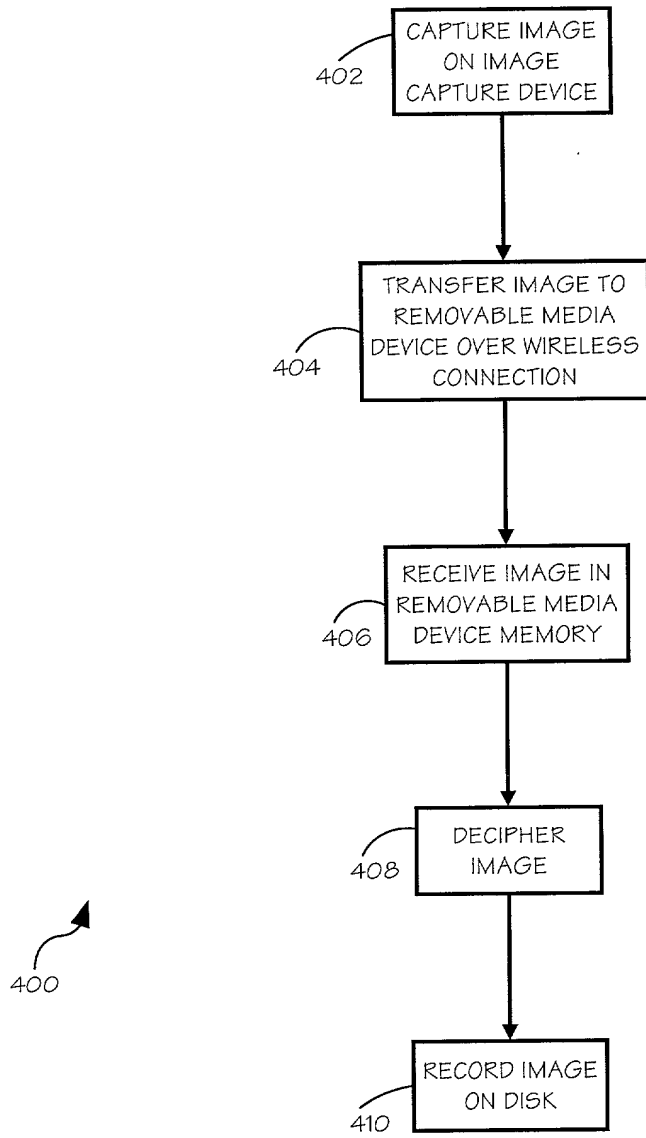


FIG. 4

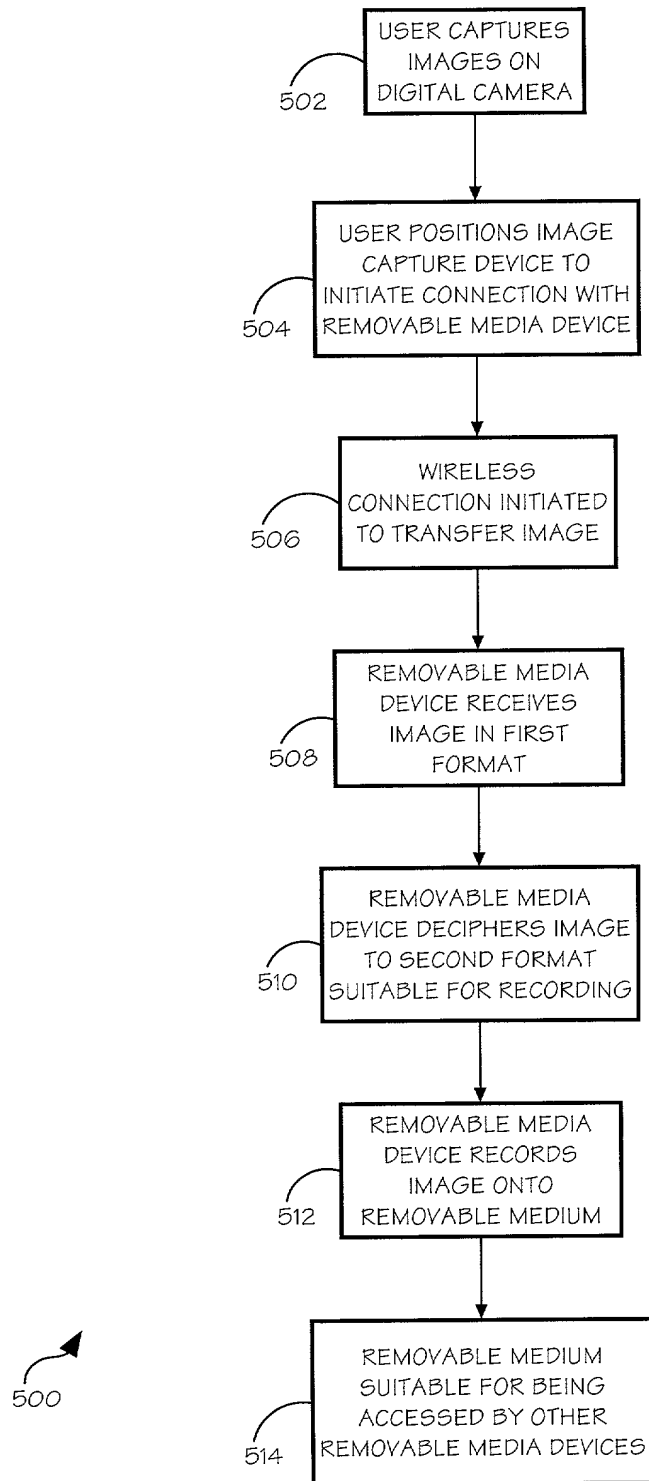


FIG. 5

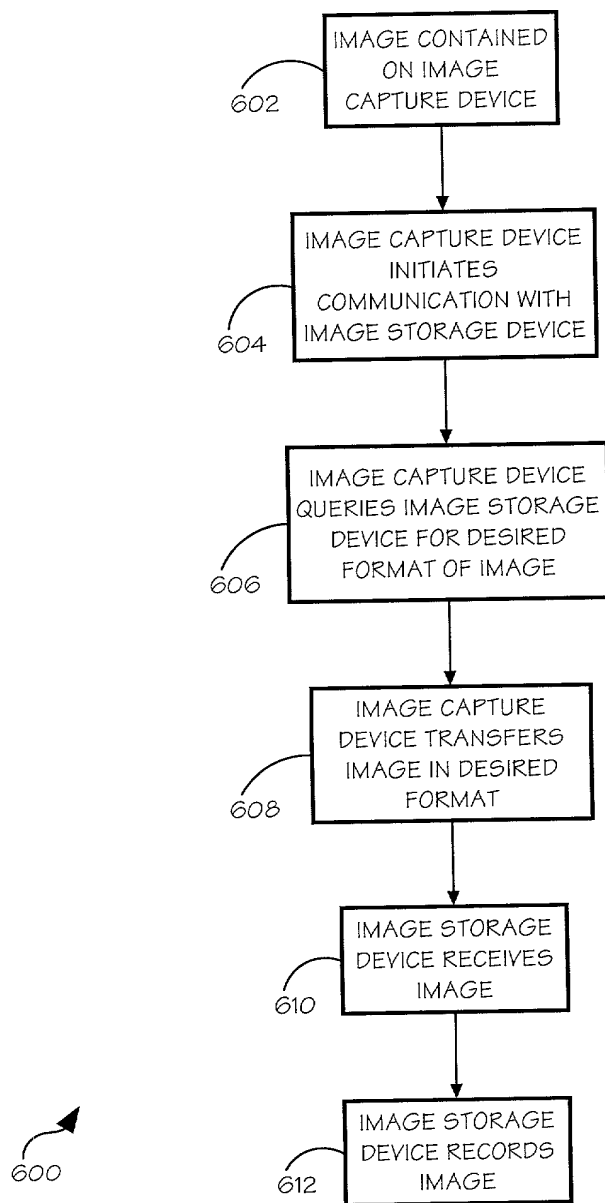


FIG. 6

Attorney Docket N°: A4-4291

Patent

DECLARATION, POWER OF ATTORNEY, AND PETITION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled "A System and Method for Communicating Images to a Removable Media Device", the specification of which:

 X is attached hereto
 was filed on _____ as Application Serial N° _____, and was amended on _____.
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

PRIOR FOREIGN APPLICATION(S)**Priority Claimed**

			Yes___ No ___
(Number)	(Country)	(Date Filed)	
			Yes___ No ___
(Number)	(Country)	(Date Filed)	

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a), regarding events which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial N°)	(Filing Date)	(Status)
(Application Serial N°)	(Filing Date)	(Status)

I hereby declare that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.


I hereby appoint David G. Pursel, Reg. 28,659; Ralph R. Veseli, Reg. 33,807; Bruce R. Hopenfeld, Reg. 39,714; and Sandeep Jaggi, Reg. 43,331; Gary Edward Ross, Reg. 29,431; Lloyd E. Dakin, Reg. 38,423; Sean Patrick Suiter, Reg. 34,260; Scott C. Rand, Reg. 40,359; Kenneth J. Cool, Reg. 40,570; Kevin E. West, Reg. 43,983; William J. Breen, III., Reg. P45,313; as my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected therewith and before competent international authorities.

Please send all correspondence to:

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Intellectual Property Law Department
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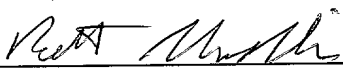
Wherefore, I pray that Letters Patent be granted to me for the invention or discovery described and claimed in the foregoing specification and claims, and I hereby subscribe my name to the foregoing specification and claims, declaration, power of attorney, and this petition.

First Inventor's Full Name: Darren Neuman
(First) (Initial) (Last)

Inventor's Signature: 

Date: 22 Dec 1999 Country of Citizenship: US
Residence Address: 434-11 Galleria Dr., San Jose, CA 95134
Post Office Address: 434-11 Galleria Dr., San Jose, CA 95134

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(First) (Initial) (Last)

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